

Supplementary material:

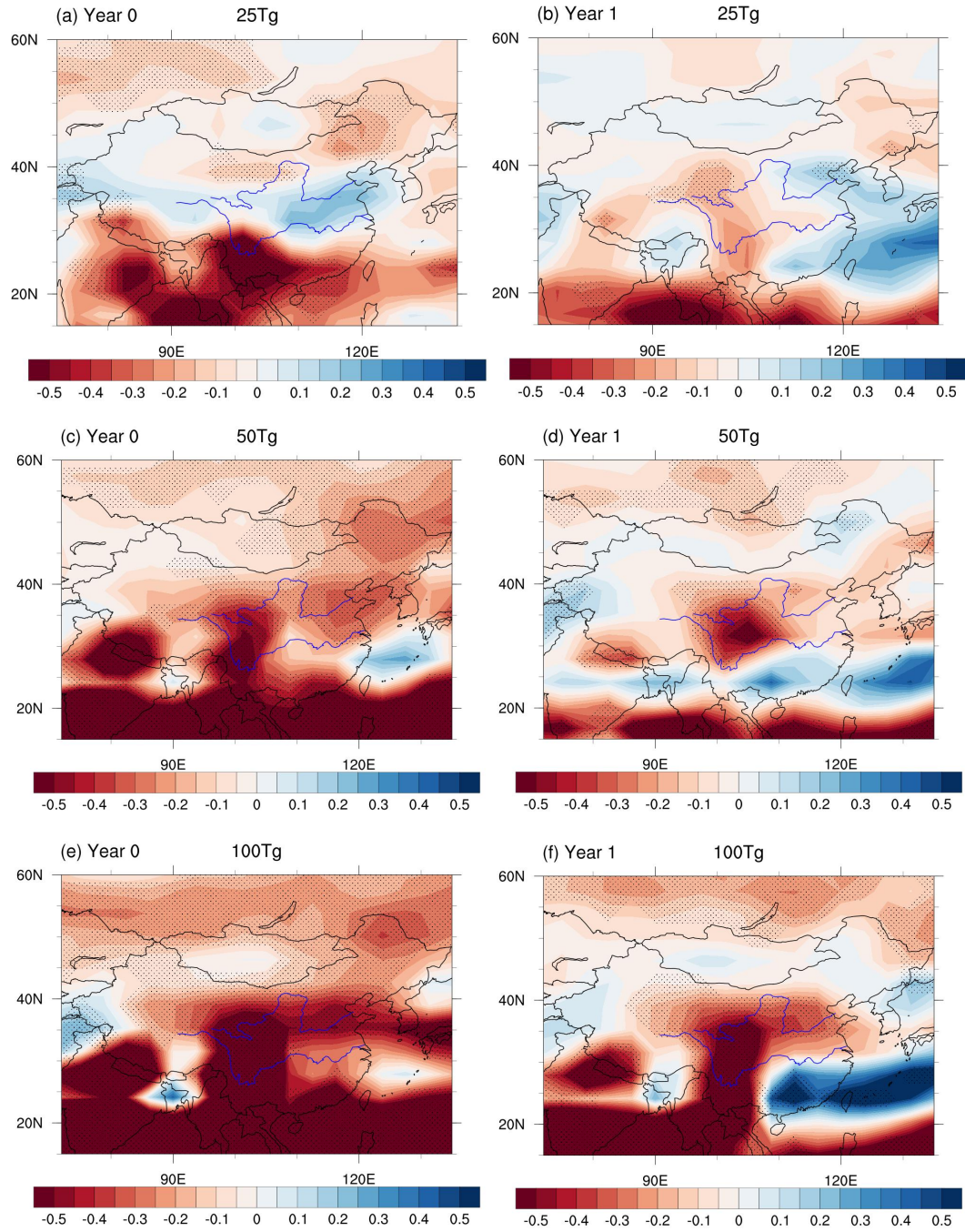


Figure S1. (a) - (b) The ensemble mean anomalies of annual (May to September) precipitation (unit: mm/day) at the first two years of the volcanic eruption in the volcanic sensitivity experiments with the magnitudes of 25Tg. (c) - (d) and (e) - (f) are similar to (a) - (b) but in volcanic sensitivity experiments with the magnitudes of 50Tg and 100Tg, respectively.

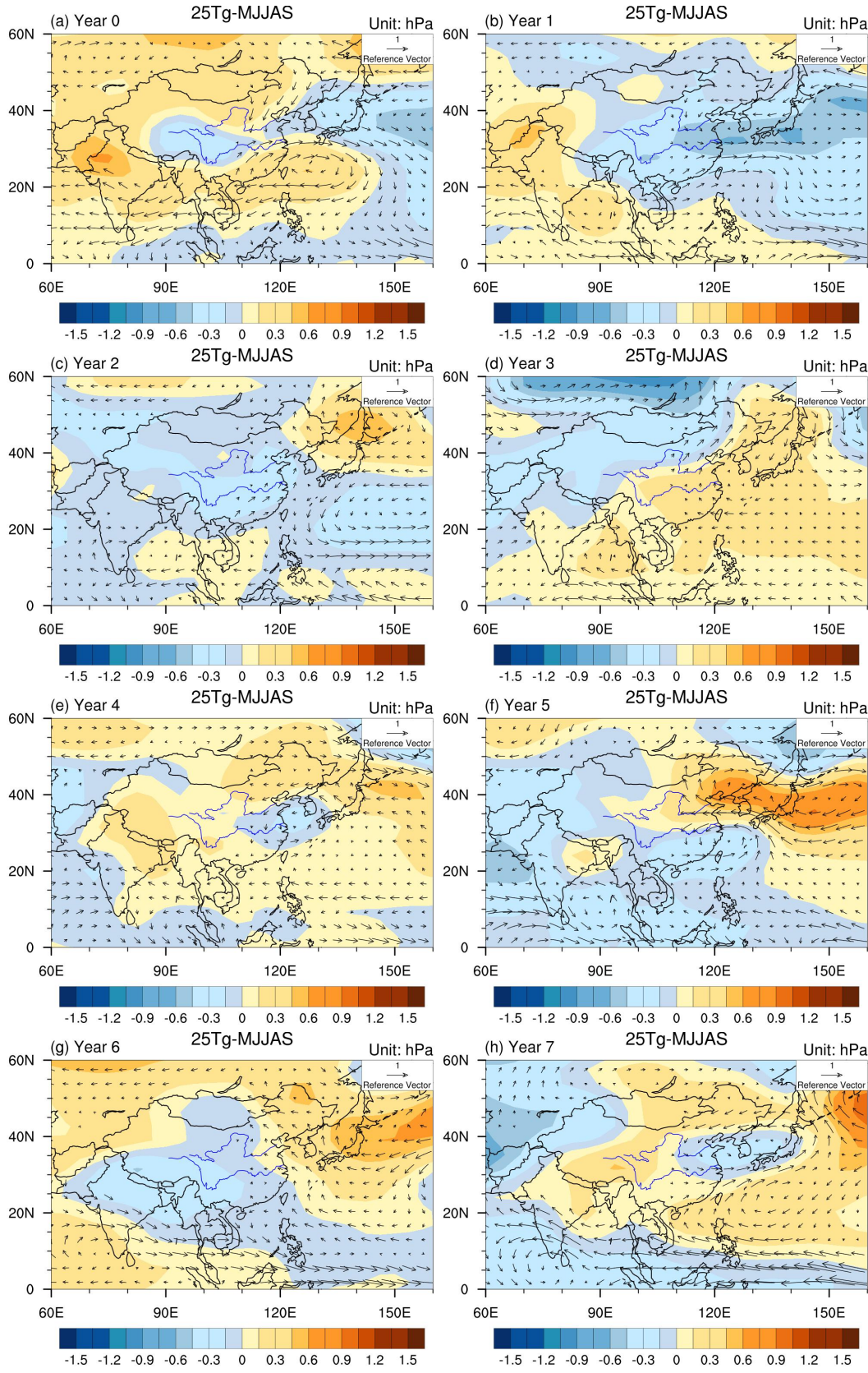


Figure S2. (a) - (h) The ensemble mean anomalies of the summer (May to September) Sea Level Pressure (SLP, unit: hPa) and 850-hPa wind field (unit: m/s) 7 years after the volcanic eruption in the 25Tg volcanic sensitivity experiments.

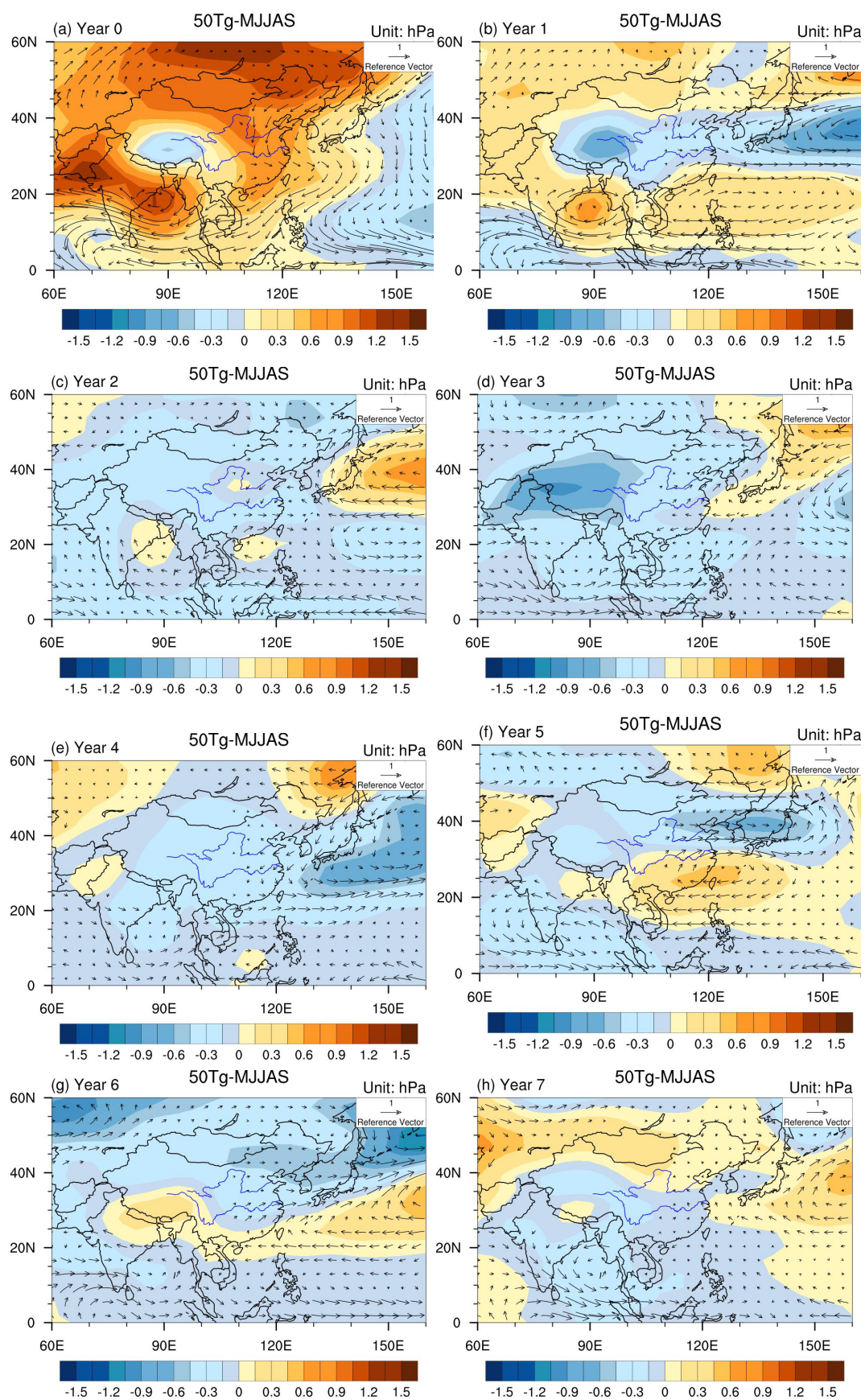


Figure S3. (a) - (h) The ensemble mean anomalies of the summer (May to September) Sea Level

Pressure (SLP, unit: hPa) and 850-hPa wind field (unit: m/s) 7 years after the volcanic eruption in the 50Tg volcanic sensitivity experiments.

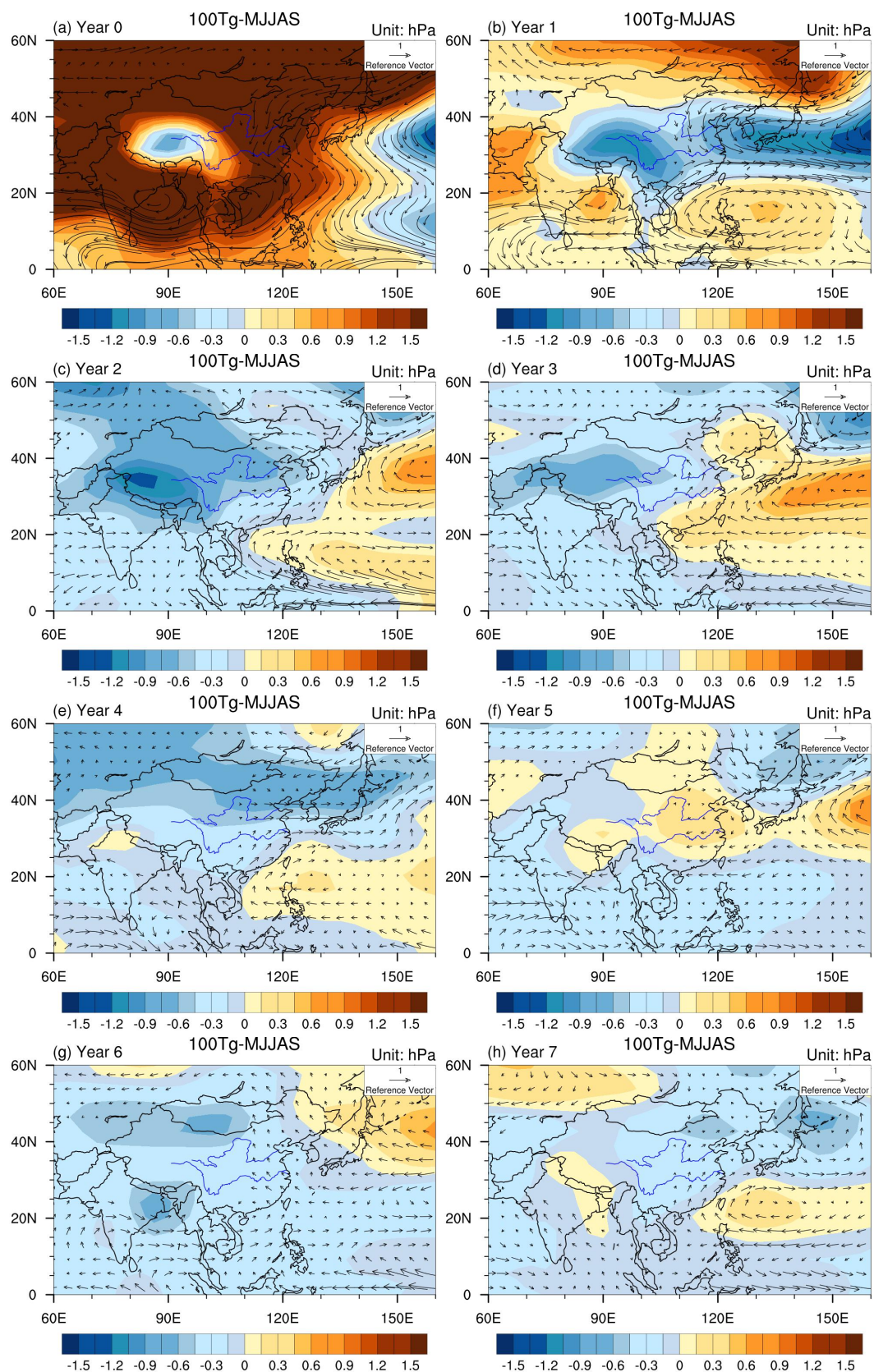


Figure S4. (a) - (h) The ensemble mean anomalies of the summer (May to September) Sea Level

Pressure (SLP, unit: hPa) and 850-hPa wind field (unit: m/s) 7 years after the volcanic eruption in the 100Tg volcanic sensitivity experiments.

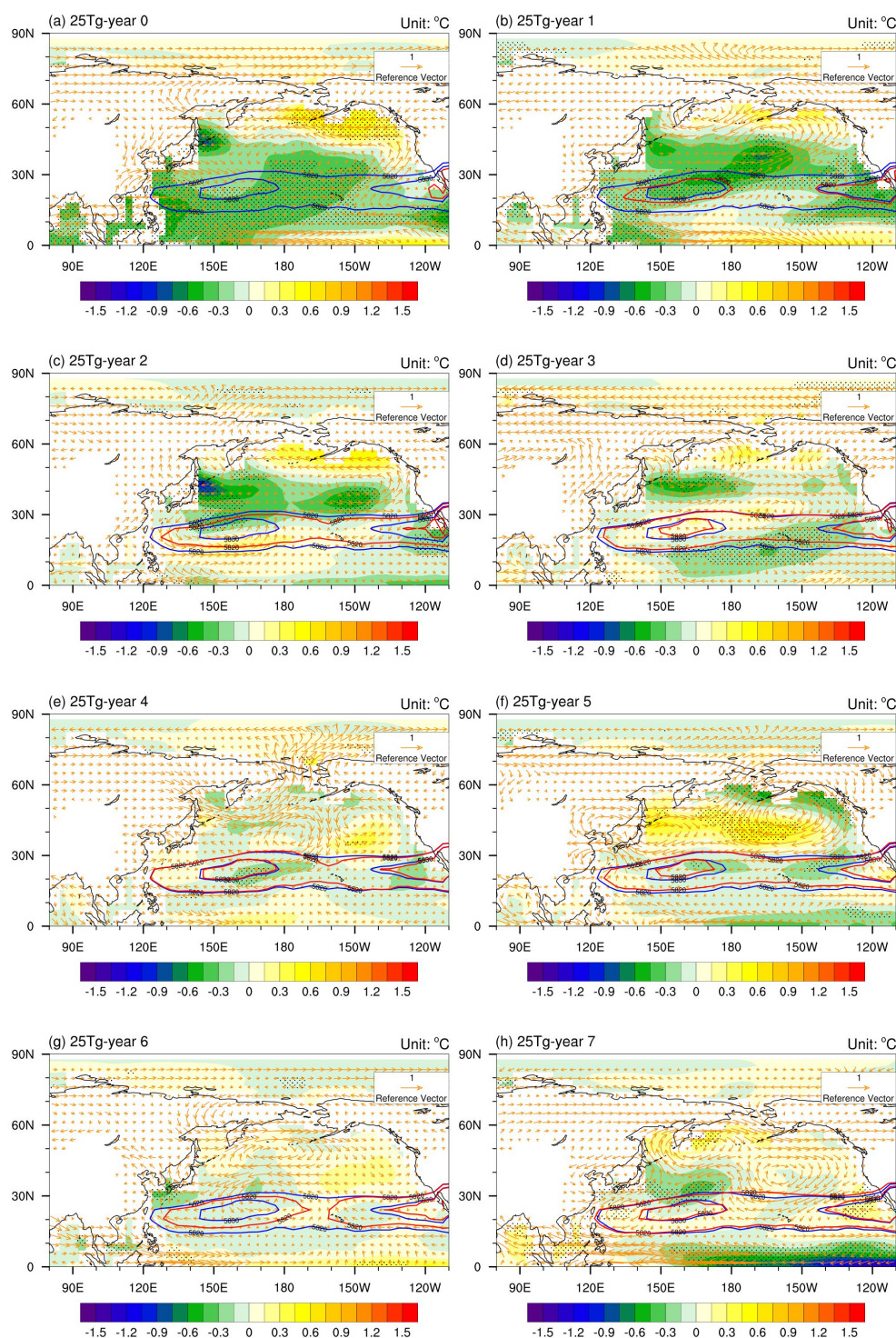


Figure S5. (a) - (h) The ensemble mean global summer (May to September) Sea Surface Temperature Anomaly (SSTA) (unit: °C) 7 years after the 25Tg volcanic sensitivity experiments. The dots denote areas with confidence levels exceeding 95%. The yellow arrows are the anomalies of summer (May to September) 850-hPa wind (unit: m/s). The red lines are the 500-hPa

Geopotential Height contour line (unit: gpm). The blue line is the climatology of the 500-hPa Geopotential Height. Year 0 is the eruption year.

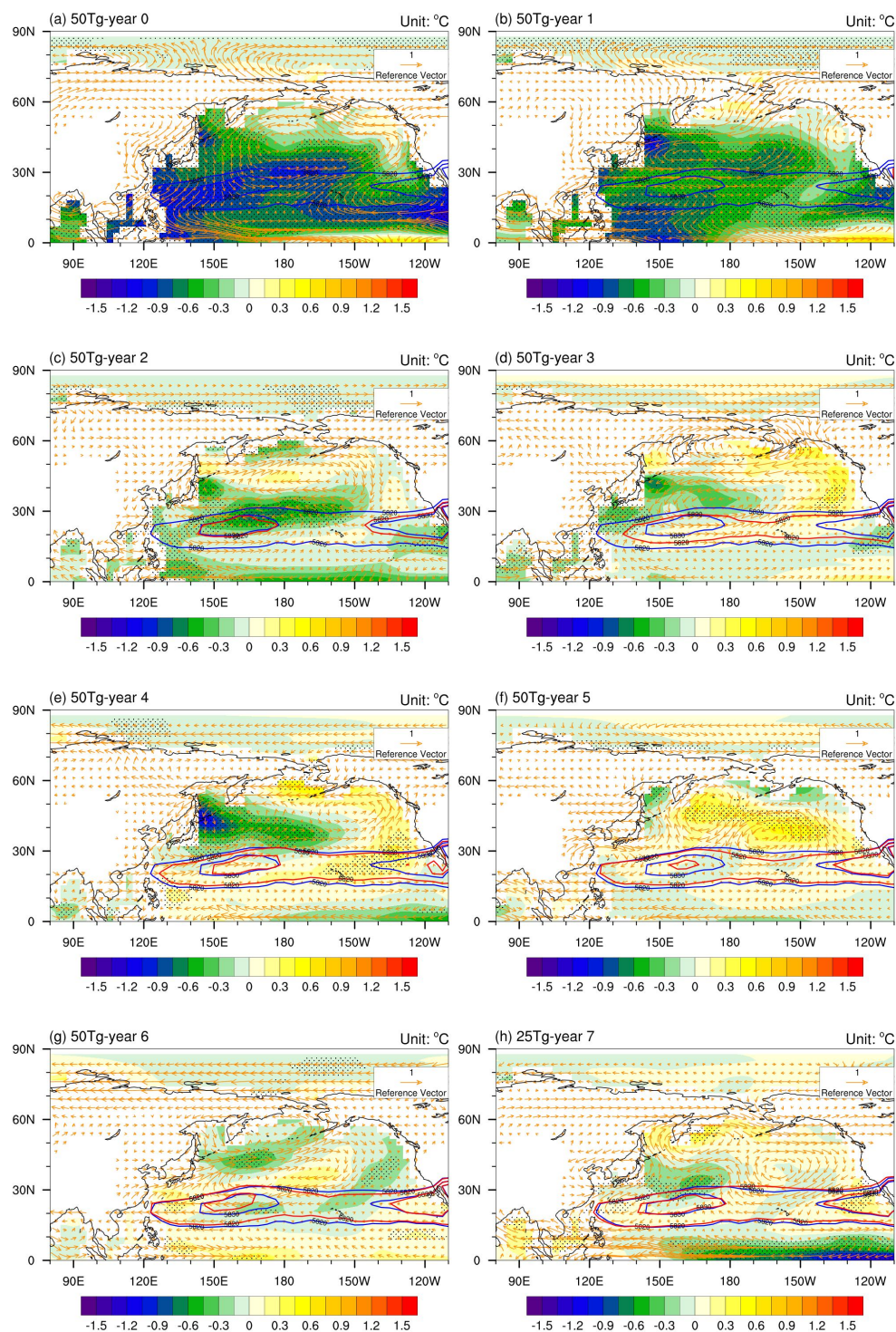


Figure S6. (a) - (h) The ensemble mean global summer (May to September) Sea Surface Temperature Anomaly (SSTA) (unit: $^{\circ}\text{C}$) 7 years after the 50Tg volcanic sensitivity experiments. The dots denote areas with confidence levels exceeding 95%. The yellow arrows are the anomalies of summer (May to September) 850-hPa wind (unit: m/s). The red lines are the 500-hPa Geopotential Height contour line (unit: gpm). The blue line is the climatology of the 500-hPa Geopotential Height.

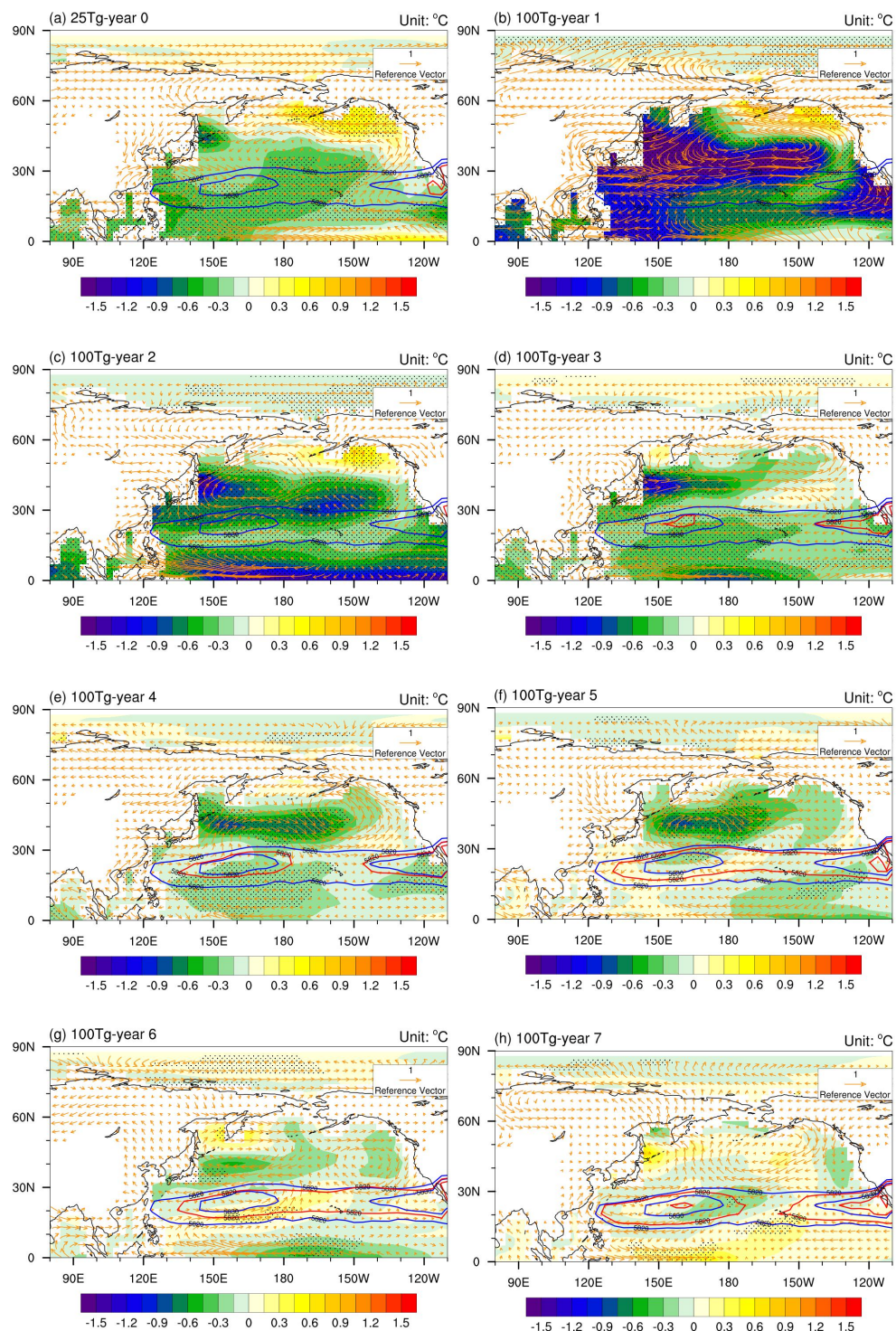


Figure S7. (a) - (h) The ensemble mean global summer (May to September) Sea Surface Temperature Anomaly (SSTA) (unit: $^{\circ}\text{C}$) 7 years after the 100Tg volcanic sensitivity experiments. The dots denote areas with confidence levels exceeding 95%. The yellow arrows are the anomalies of summer (May to September) 850-hPa wind (unit: m/s). The red lines are the 500-hPa Geopotential Height contour line (unit: gpm). The blue line is the climatology of the 500-hPa Geopotential Height.

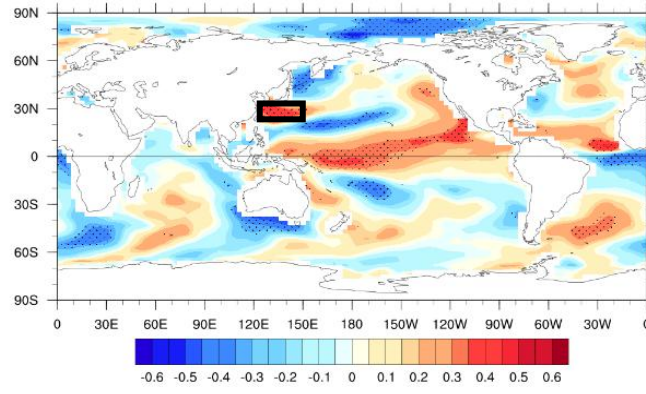


Figure S8. The correlation coefficients between the summer (MJJAS) precipitation over the eastern China and SST in the control experiment. The stippling indicate the correlation coefficients are significant at 95% level. The region in black rectangle is 123°E-150°E, 15°N-30°N.